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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/783,390	02/20/2004	Otman Adam Basir	60,449-095	6422
26/096 7590 05/12/2009 CARLSON, GASKEY & OLDS, P.C. 400 WEST MAPLE ROAD SUITE 350 BIRMINGHAM, MI 48009				
EXAMINER				
TO, TUAN C				
ART UNIT		PAPER NUMBER		
3663				
MAIL DATE		DELIVERY MODE		
05/12/2009		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.



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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/783,390
Filing Date: February 20, 2004
Appellant(s): BASIR ET AL.

John E. Carlson
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 2/2/2009 appealing from the Office action mailed 12/18/2007.

(1) Real Party In Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any other related appeals, interference, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Boards' decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments after Final

The appellant's statement of the status of amendments after final rejection contained in the supplemental brief is correct.

(5) Summary of Claimed Subject Matter

The appellant's statement of the summary of the claimed subject matter is correct.

(6) Ground of Rejection to be reviewed on Appeal

The appellant's statement of the grounds of rejection to be viewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contains in the Appendix to the brief is correct

(8) Evidence Relied Upon

Kung (U.S. 5,850,470 A)

Christl et al. (U.S. 2004/0176891 A1)

Baloch et al. (U.S. 6459974 B1)

(9) New Grounds of Rejection

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-9, 14, 25-29, and 32-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Christl et al. (US 20040176891A1) and in view of Kung et al. (US 5850470A).

Regarding claim 1, Christl discloses a system and method for monitoring the interior of a vehicle comprising:

capturing, by a CMOS camera or a CCD camera, an image of an occupant area in a vehicle (paragraph 0047);

classifying an occupant in the occupant area based upon the analyzing a spatial feature matrix, wherein the classification includes: adult and child (see abstract; paragraph 0004-0009, 0054, and 0055);

and the step of analyzing the spatial matrix. For example, in paragraph 0026, Christl discloses that the $n \times n$ matrix is defined in which the transitional probability are combined. In paragraph 0053, Christl shows a matrix of three columns and three rows (3×3) in which the columns and rows represent the occupancy classes (L, K, P). And in paragraphs 0054, and 0055, Christl discloses how said matrix is analyzed.

Christl merely fails to disclose the steps of:

dividing the image into a plurality of subimages of different predetermined spatial regions;

generating a spatial feature matrix of the image based upon the plurality of subimages.

Kung teaches a system/method for classifying an occupant including the steps of:

dividing the image into a plurality of subimages of different predetermined spatial (figure 4, column 3, lines 9-22, the face image is divided to facial features and hairline features, the image scene is preprocessed into subimages);

generating a spatial feature matrix of the image based upon the plurality of subimages (figure 5 represents a spatial feature matrix of the image based upon plurality of subimages).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system as taught by Christl to include the teaching of Kung in order to enhance a safety control system onboard a motor vehicle that can take and analyzes the images of the occupant's face as well as another part of the occupant's body.

As to claim 2, Kung further teaches "processing the image to account for lighting and motion before "analyzing the spatial feature matrix" (abstract).

As to claim 3, Kung further teaches "smoothing the classification of the occupant over time" (column 4, lines 14-22).

As to claim 4, Christl discloses determining whether to activate an active restraint based upon the classification of step (e) (see paragraph 0066).

As to claims 5-8, and 26-28, Kung clearly teaches applying expert classifier algorithm to the spatial feature matrix, analyzing the spatial feature matrix (figure 5). Kung also teaches that a plurality of images of known occupant classifications of the occupant area are generated.

As to claims 9, and 29, Kung teaches "analyzing the spatial feature matrix based on the location from which the image is captured relative to the occupant area" (see abstract, the position (location) of the object's image such as the eyes).

As to claim 14, Kung shows that the plurality of subimages represented in figure 4 overlap one another.

As to claims 32, 33, and 35-38, Christl discloses determining the classification of the occupant from among the classification including: adult, child, and infant seat (paragraph 0066).

As to claim 25, Christl discloses a system and method for monitoring the interior of a vehicle comprising:

capturing, by a CMOS camera or a CCD camera, an image of an occupant area in a vehicle (paragraph 0047);

classifying an occupant in the occupant area based upon the analyzing a low-level descriptors, wherein the classification includes: an infant seat (see abstract; paragraph 0006, 0054, and 0055);

and the step of analyzing the spatial matrix. For example, in paragraph 0026, Christl discloses that the $n \times n$ matrix is defined in which the transitional probability are combined. In paragraph 0053, Christl shows a matrix of three columns and three rows (3x3) in which the columns and rows represent the occupancy classes (L, K, P). And in paragraphs 0054, 0055, Christl discloses how said matrix is analyzed.

Christl merely fails to disclose the steps of:

dividing the image into a plurality of subimages of different predetermined spatial regions;

generating a plurality of low-level descriptors from each of the plurality of subimages.

Kung teaches a system/method for classifying an occupant including the steps of:

dividing the image into a plurality of subimages of different predetermined spatial (figure 4, column 3, lines 9-22, the face image captured by the video camera is divided into facial features and hairline features.)

generating a spatial feature matrix of the image based upon the plurality of subimages (figure 5 represents a spatial feature matrix of the image based upon plurality of subimages).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system as taught by Christl to include the teaching of Kung in order to enhance a safety control system onboard a motor vehicle that can take and analyzes the images of the occupant's face as well as another part of the occupant's body.

Regarding claim 34, Christl discloses a system and method for monitoring the interior of a vehicle comprising:

capturing, by a CMOS camera or a CCD camera, an image of an occupant area in a vehicle (paragraph 0047);

analyzing the spatial matrix. For example, in paragraph 0026, Christl discloses that the nxn matrix is defined in which the transitional probability are combined. In paragraph 0053, Christl et al. shows a matrix of three columns and three rows (3x3) in which the columns and rows represent the occupancy classes (L, K, P). And in paragraphs 0054, and 0055, Christl discloses how said matrix is analyzed.

determining whether the occupant area in the vehicle is occupied by a person based upon analyzing the spatial matrix (see abstract; paragraph 0004-0009, 0054, and 0055).

Christl merely fails to disclose the steps of:

dividing the image into a plurality of subimages of different predetermined spatial regions;

generating a spatial feature matrix of the image based upon the plurality of subimages.

Kung teaches a system/method for classifying an occupant including the steps of:

dividing the image into a plurality of subimages of different predetermined spatial (figure 4, column 3, lines 9-22, the face image is divided to facial features and hairline features, the image scene is preprocessed into subimages);

generating a spatial feature matrix of the image based upon the plurality of subimages (figure 5 represents a spatial feature matrix of the image based upon plurality of subimages);

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system as taught by Christl to include the teaching of Kung in order to enhance a safety control system onboard a motor vehicle that can take and analyzes the images of the occupant's face as well as another part of the occupant's body.

Claims 10-13, 30, and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Christl et al. (US 20040176891A1), Kung et al. (US 5850470A), and further in view of Baloch et al. (US 6459974B1).

As to claims 10 and 30, neither Christl nor Kung disclose "altering the orientation or the location from which the image is captured and adjusting the system parameters".

Baloch discloses that based on the occupant's location from which the occupant's image is captured, the system parameters are adjusted (column 6, lines 38-57; column 12, lines 43-61).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system/method of Christl, Kung to include the teaching as taught in Baloch in order to accurately activate or deactivate the restraint system based upon the posture of the vehicle occupant.

Regarding claims 11-13, and 31, Christl and Kung fail to teach "analyzing the spatial feature matrix based upon system parameters including an orientation or a location from which the image is captured relative to the occupant area".

Baloch is provided for teaching such that feature (column 6, lines 38-45).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system/method of Christl and Kung to include the teaching as taught in Baloch for the advantage of accurately activating or deactivating the restraint system based upon the position of the occupant on the seat (e.g., rear facing infant seat or front facing child seat).

(10) Response to Argument

The appellant appeal to the rejection of the claims by stating that Christl does not disclose classifying a person based upon a spatial feature matrix.

In contrast, the examiner has recognized the Christl's monitoring system/method is provided for monitoring the interior of a vehicle, wherein the change occurring in the occupancy of a seat, e.g. with a person P, a child seat K, and empty seat L, or an occupancy in another occupancy category are effected in a computer unit by means of transitional probabilities. The change in occupancy is taken into account by the monitoring system. And the result of the monitoring process is to activate an associated airbag or another safety device depending on the occupancy state (Christl's abstract).

In Christl, in order to complete the process of monitoring the interior of a vehicle, wherein the change occurring in the occupancy of a seat, Christl discloses the act of "classifying a person based upon a spatial feature matrix". As set forth in paragraph 0026, Christl discloses that the $n \times n$ matrix is defined in which the transitional probabilities are combined. In paragraph 0053, Christl shows a matrix (3x3) of three columns and three rows in which the columns and rows represent the occupancy classes (L, K, P). And in paragraphs 0054 and 0055, Christl discloses how said matrix is analyzed.

The appellant argued in page 5 of the brief that Kung does not classify an occupant. The appellant further asserts that Kung identifies a person (for example, for

accessing an ATM), but only if the person is known in the database. Kung provides no "classification" of the person.

In response to the appellant's arguments above, Christ is provided as disclosing the act of classifying an occupant as part of the monitoring process.

Christ merely fails to disclose "dividing the image into a plurality of subimages of different predetermined spatial regions; and generating a spatial feature matrix of the image based upon the plurality of subimages" as required in the claims.

Kung directs to a system/method for automatically detecting and recognizing the identify of a deformable object such as a human face, within an arbitrary image scene. In Kung, the image captured by the camera is processed and divided into a plurality of subimages (e.g. facial features, hairline features, etc). A spatial feature matrix of the image based upon the plurality of subimages is generated. For example, in figure 5, Kung graphically shows a spatial feature matrix of the image based upon plurality of subimages.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the system as taught by Christl to include the teaching of Kung to enhance a safety control system onboard a motor vehicle that are able to take and to analyze the images of the occupant's face as well as another part of the occupant's body.

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interference section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

This examiner's answer contains a new ground of rejection set forth in section (9) above. Accordingly, appellant must within **TWO MONTHS** from the date of this answer exercise one of the following two options to avoid *sua sponte* **dismissal of the appeal** as to the claims subject to the new ground of rejection:

(1) **Reopen prosecution.** Request that prosecution be reopened before the primary examiner by filing a reply under 37 CFR 1.111 with or without amendment, affidavit or other evidence. Any amendment, affidavit or other evidence must be relevant to the new grounds of rejection. A request that complies with 37 CFR 41.39(b)(1) will be entered and considered. Any request that prosecution be reopened will be treated as a request to withdraw the appeal.

(2) **Maintain appeal.** Request that the appeal be maintained by filing a reply brief as set forth in 37 CFR 41.41. Such a reply brief must address each new ground of rejection as set forth in 37 CFR 41.37(c)(1)(vii) and should be in compliance with the other requirements of 37 CFR 41.37(c). If a reply brief filed pursuant to 37 CFR 41.39(b)(2) is accompanied by any amendment, affidavit or other evidence, it shall be treated as a request that prosecution be reopened before the primary examiner under 37 CFR 41.39(b)(1).

Extensions of time under 37 CFR 1.136(a) are not applicable to the TWO MONTH time period set forth above. See 37 CFR 1.136(b) for extensions of time to reply for patent applications and 37 CFR 1.550(c) for extensions of time to reply for ex parte reexamination proceedings.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan C To whose telephone number is (571) 272-6985. The examiner can normally be reached on from 8:00AM to 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Keith can be reached on 571-272-6878.

The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Respectfully submitted,

/Tuan C To/

Primary Examiner of Art Unit 3663/3600

May 6, 2009

A Technology Center Director or designee must personally approve the new ground(s) of rejection set forth in section (9) above by signing below:

/Michael J. Carone/

Acting Director, TC 3600

Conferees:

Tuan C To (Examiner) /TT/

Jack Keith (S.P.E) /J. W. K./

Supervisory Patent Examiner, Art Unit 3663

Marc Jimenez (Appeal Specialist)